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Idiographic Complexity and the Common Personality Dimensions Insensitivity, Extraversion, Neuroticism, and Orderliness

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Abstract

This paper reports on an attempt to investigate empirically whether the common personality dimensions S or Insensitivity, E or Extraversion, N or Neuroticism, and G or Orderliness, as postulated in Van Kampen's modification of Eysenck's PEN model, would in principle give rise to the same level of predictive accuracy as a set of personal traits obtained in each of a series of assessments of separate individuals. Using a special methodology to 'convert' the nomothetic dimensions into factors that are of idiographic relevance, (within-person) correlations and multiple correlations between the idiographic traits and the nomothetic dimensions S, E, N, and G (predictors) were computed in a sample of 83 subjects. Results showed that the idiographic traits could be expressed in most cases as linear combinations of the four idiographically converted nomothetic factors, and that the degree to which an individual's idiographic data could be explained nomothetically was unrelated to this individual's conformity to the nomothetic zero-correlational structure of the four dimensions. Copyright © 2000 John Wiley & Sons, Ltd.

INTRODUCTION

According to the classic dictum of Kluckhohn and Murray (1953), 'Every man is in certain respects (a) like all other men, (b) like some other men, (c) like no other man' (p. 53). Although this dictum seems necessarily true, there is substantial controversy in personality psychology about the 'best' level on which man should be studied. According to Allport's (1937) primarily idiographic orientation, 'The outstanding characteristic of man is his individuality' (p. 3). Instead of seeking characteristics that may be applied to all persons, or at least to a group of persons, one must give priority to those features that are only applicable to the single individual. Although Allport

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(1961) considers it possible to define a common (or nomothetic) trait as 'a category for classifying functionally equivalent forms of behavior in a general population of people' (p. 349), such a trait can only be seen as an approximation of a 'real' trait or personal disposition. In deriving common dimensions by means of factor analysis, for instance, 'An entire population (the larger the better) is put into the grinder, and the mixing is so expert that what comes through is a link of factors in which every individual has lost his identity ... Whether a factor is really an *organic* disposition in any one individual life is not demonstrated. All one can say for certain is that a factor is an empirically derived component of the *average* personality, and that the average personality is a complete abstraction' (Allport, 1937, p. 244; see also Bonarius, 1969). Furthermore, Allport (1937, 1962) has argued that the individuality of a person may be found in the unique patterning or organization of variables within the single case, the study of which he has called 'morphogenic' (Allport, 1962). Even if we start with common traits or generalized dimensions, every single person weaves these attributes into a unique idiomatic system, in which these common dimensions probably are related in ways that are dissimilar to the relationships that can be observed nomothetically. However, as these common dimensions are always imposed on the individual, and as individuality is not considered to be 'the residual ragbag left over after general dimensions have been exhausted' (Allport, 1962, p. 410), a truly morphogenic psychology starts with those features that seem to be directly relevant to a certain case, studying, for instance, the unique thought structure of an individual as revealed in a series of personal letters (Baldwin, 1942; see also Allport, 1965). Also in the field of prediction—'which, we are told, is the acid test of a valid science' (Allport, 1962, p. 411)—emphasis on data about the single case is expected to cause higher levels of predictive accuracy than merely relying on a nomothetic framework of actuarial prediction. The finding, for instance, that boys with a certain 'negative' family background have a 70 per cent chance of starting a criminal career, implies nothing, according to Allport, with respect to the chance of a particular boy with a similar background doing the same. This particular boy's 'unique world contains influences unknown to the statistician: perhaps an affectionate relation with a certain teacher, or a wise word once spoken by a neighbor. Such factors may be decisive and may offset all average probabilities' (Allport, 1962, p. 411). Hence, personality psychology, as seen from a strictly idiographic point of view, must be able to portray both the uniqueness and the complexity of the individual case. By using methods capable of revealing personal dispositions and their patterned relationships within the individual, a truly morphogenic personality psychology aims at the in-depth understanding of unique persons. In a more liberal sense, however, the term 'idiographic' can also be used to denote procedures that concern the application of common traits, but in which these traits are only applied if they are relevant to a particular individual (Allport, 1962; Runyan, 1983).

Notwithstanding the possible merits of the idiographic approach (see, e.g., Pelham, 1993), most personality psychologists maintain that in order to study behaviour scientifically, one has to generalize from the individual case, for, although the single case must indeed be recognized as 'a useful source of hunches' (Allport, 1962, p. 406), science has always to do with replicable phenomena that can be accounted for in terms of adequate common or general principles. That is, to endorse that the ultimate goal of science is to find unity in diversity. In order to abstract from the individual case, the individual data must, of course, be postulated to have at least something in

common. In Eysenck's nomothetic personality theory, for instance, these common features are already assumed to be present at what Eysenck considers the lowest level of personality organization, because the habitual responses at that level are believed to correlate in the population, giving rise to primary traits which are considered to be of a higher level (see, e.g., Eysenck, 1947). In a similar vein, Holt (1962) has postulated that individual data usually refer to variations above or below the mean of some attribute. According to him, 'It is a mistake to focus personology on just those aspects of a person that are unique', for leaving out everything a person has in common with other people results precisely in the 'residual ragbag' that Allport (1962) considered impossible (see Holt, 1962, p. 398). Moreover, as Holt (1962) points out, 'If every personality structure were as much a law unto itself as Allport implies, . . . there would be no transfer from one case study to another. As anyone knows who has tried it, there is a great deal' (p. 398). Therefore, in keeping with these considerations nomothetically oriented personality psychologists have argued that the main objective in personality psychology is the isolation of those (presumably few) personality factors that are not only applicable to people in general, but that are also necessary and sufficient to describe the personality of any given individual (see also Lamiell, 1981). Since in his view the idiographic approach as a separate methodology in personality psychology can be dismissed, Holt (1962) considers both the terms 'idiographic' and 'nomothetic' as superfluous. To him, there can be only one methodology in personality psychology as a science (without the need to call this methodology 'nomothetic'), because, in his opinion, it should be taken for granted that the laws that govern individual variation are just as abstract as the laws that cover the general case.

In a way, the distinction between the idiographic (or individualizing) and the nomothetic (or generalizing) approach refers to a pseudo-problem. For if we want to describe an individual trait, 'we have to take one of two courses: either we create a unique word (or neologism) for each unique trait, or we use a unique configuration of existing words. The first approach is clearly impossible for communication, let alone science; personology would be a complete Babel. The second solution, however, turns out to be a concealed form of nomothesis, for what is a unique configuration of existing worlds but a ''fallacious attempt to capture something ineffably individual by a complex net of general concepts''?' (Holt, 1962, p. 391). Indeed, every so-called individual trait is in fact nomothetic, for the words we use to describe such a trait are always applicable to more than one person (De Groot, 1966, p. 363). On the other hand, however, creating concepts and categories that do justice to the behaviour of specific individuals is certainly what Allport meant by idiographic, and, therefore, the real difference between the idiographic and the nomothetic approach may be found in the question 'whether the individual will be studied in enough detail to permit the *formulation* of idiographic traits and classes of behavior, or whether the individual will be described solely in terms of a prior set of nomothetic categories' (Runyan, 1983, p. 420). In fact, as Bem and Allen (1974) have pointed out, the idiographic approach resembles that used by the layman: 'When we are asked to characterize a friend, we do not invoke some a priori set of fixed dimensions which we apply to everyone. Rather, we permit ourselves to select a small subset of traits which strike us as pertinent and to discard as irrelevant the other 17,993 trait terms in the lexicon' (p. 510). Despite the fact that the idiographic approach thus defined makes use of common trait terms, and that Allport's (1937) contention that a common trait 'is not

a true trait at all, but is merely a measurable aspect of complex individual traits' (p. 299) is now dismissed, the problem still remains that a different set of terms would be required for each individual, leading, of course, to the uneasy situation that the terms used for one person cannot be related to the terms used for another person. Moreover, as Levy (1970) has noted, although 'There is no reason to object on principle to the suggestion by Rosenzweig that the individual may be conceived of ''as a world of events constituting a population, subject to both statistical analysis and dynamic conceptualization'' (1951, p. 213)', and, therefore, that the structural analysis of within-person phenomena, by means of, for instance, Kelly's (1955) Role Construct Repertory Test or Cattell's P-technique of factor analysis (see, e.g., Cattell, 1966), seems to be wholly appropriate if we want to study a particular person, both 'the value and meaning of data collected by these methods can only be found within the context of laws that hold for all individuals. The identity of the individual with which we are concerned in the study of personality is accounted for by the particular values obtained by him on the variables contained in these laws and by the postulates that state the ways in which these will interact with each other. It is not possible to go beyond this and remain within the confines of science' (Levy, 1970, p. 76). Lastly, Allport's (1962) objection to the use of a 'rigid' nomothetic framework in actuarial prediction cannot be taken seriously, for as his own example (see above) clearly demonstrates, it seems that precisely the addition of one or more common factors—in the example, for instance, 'social support' and 'affection'—is needed to improve the predictive accuracy. Although in practice it is sometimes necessary to combine our heads with our models in prediction (e.g., Kleinmuntz, 1990), it seems far more important to use our heads to improve our models (cf. Dawes, Faust and Meehl, 1993, p. 364).

Granted, then, that the final way to study personality is certainly nomothetic, and that, sooner or later, we will have to opt for a fixed set of common personality dimensions, there are at least three problems left. In the first place, in selecting some personality factors as being 'basic', 'major' or 'fundamental', different guidelines have been followed by different investigators (see, e.g., Costa and McCrae, 1992; Eysenck, 1992, 1994a, b; Goldberg, 1993; Saucier and Goldberg, 1996). According to Eysenck (1994b), for instance, in order to qualify a personality factor as basic, the factor must form part of a general nomological network that has been tested by making deductions from it 'as to how people at various positions on the relevant personality dimensions would behave in carefully designed experimental situations' (p. 8). In the case of Eysenck's P or Psychoticism dimension, for instance, testable predictions have been made by stating that differences in scores between schizophrenics and normals on measures theoretically related to schizophrenia (e.g., eye-tracking behaviour or latent inhibition) should be paralleled by similar score differences between high and low P scorers (see for a summary, e.g., Eysenck, 1994a). In contradistinction to this, the (lexical) Big Five notion of what constitutes a major factor of personality (see, e.g., Goldberg, 1993) has not been guided by psychological theory, but by the so-called lexical hypothesis which states that the most salient or socially relevant personality characteristics that are observed in the process of human interaction have at a time been encoded as single terms in natural languages, and that, thus, the establishment of a truly comprehensive taxonomy of basic personality factors could proceed from a thorough examination—by means of synonym ratings, cluster analysis and factor analysis—of all personality-descriptive terms contained in a dictionary. It has been

argued, however, both by Eysenck (1994b) and McCrae and Costa (1985a), that the resulting lexical model might perhaps be more concerned with the structure of language than with the structure of personality, notwithstanding the fact that two of the Big Five factors—Surgency and Emotional Stability—are clearly similar to the dimensions Extraversion and Neuroticism (reversed) postulated by Eysenck (see McCrae and Costa, 1985b; Goldberg and Rosolack, 1994). Moreover, the use of laypersons in the lexical approach as the ultimate 'experts' in defining the basic variables of personality has also been questioned (Block, 1995). Therefore, in our own research (Van Kampen, 1993, 1996, 1997), we, too, have opted for a theory-based approach in the selection of basic personality dimensions. Starting with Eysenck's PEN model, and criticizing Eysenck's P theory, we postulated four major dimensions, namely Insensitivity (S), Extraversion (E), Neuroticism (N), and Orderliness (G). Because it was found that our factors S and G, which took the place of Eysenck's P dimension, correlated with the Big Five dimensions Agreeableness (reversed) and Conscientiousness (Van Kampen, 1996), the conclusion was drawn that, even from different perspectives, the dimensions S, E, N, and G must be considered basic dimensions of personality. However, with so many different viewpoints, and also noting that some investigators (see, e.g., Moosbrugger and Fischbach, 1999; Ortet, Ibáñez, Moro, Silva and Boyle, 1999; Gibbons and Rammsayer, 1999) still adhere to Eysenck's Psychoticism dimension, in the research reported in this article the factors Insensitivity, Extraversion, Neuroticism, and Orderliness are merely selected to represent our *preferred*—and not the only possible—nomothetic model.

A second problem associated with the need to opt for a fixed set of common personality factors is related to the idiographic notion that the correlations (between habitual responses or primary traits) that underlie these common dimensions may be different for different persons. That is, if we follow the (now-preferred) nomothetic approach, the resulting common dimensions—and their loadings, referring to the 'relevance' of the defining variables (cf. Lamiell, 1981, p. 277)—may in fact be considered to apply to 'people in general', but not necessarily to each particular person, despite the assertion of most nomotheticists that these common factors are appropriate for the personality description of any given individual. Indeed, as Bakan (1969) has argued, it seems wise to distinguish in psychology between 'general-type' and 'aggregate-type' propositions, because whereas general-type propositions hold for *each* member of a predefined class of people, aggregate-type propositions apply only to a class of people *as a group* (see also Lamiell, 1990). Of course, the dilemma stemming from this distinction is real, but, as yet preferring the nomothetic approach, at least a reasonable solution can be acquired if we realize that there is no need to assume that the correlations mentioned above are always the same for different groups of individuals. In this respect, the recognition of Kluckhohn and Murray (1953) that 'Every man is in certain respects ... like some other man', and thus that some generalizations are merely group specific, is important. What is being asserted here is that different correlations may be found when total groups are subdivided according to sex or age or personality characteristics, and that these parameters therefore may be seen as moderator variables. Indeed, as has been stated by Eysenck (1967), 'What is true of experimental and applied psychology is equally true of correlational psychology ... Here too it might be suggested that correlational psychology, just like experimental psychology, is subject to typological troubles and erroneously makes the same assumptions of lack of individual differences—even when

investigating individual differences!' (p. 26). Hence, in factor analytic personality studies common dimensions may be accepted, provided that the invariance of these factors 'with change in sample along such parameters as sex, age, class, and education must be rigorously demonstrated. No claims for the "existence" of a factor can be entertained seriously until and unless such proof of invariance is given, or until the exact rules of change of factor composition with change of parameters are established' (Eysenck and Eysenck, 1969, p. 326). Although Eysenck himself has studied the invariance of his P, E, and N factors with respect to only one single parameter (sex), the invariance of the factors S, E, N, and G was investigated by us, on our part, with change in sample along a more extended set of parameters, consisting of two 'external' parameters, *viz*. sex and age (sometimes adding a third one, intelligence), and four 'internal' parameters, *viz*. the dimensions S, E, N, and G themselves (see Van Kampen, 1993, 1997). Starting each study in a series of factor analytic investigations with a set of potential S, E, N, and G items, and replacing in each subsequent investigation those items that did not load on an 'intended' factor in at least one of the subgroups formed on the basis of the selected parameters (e.g., a subgroup of females or a subgroup of introvert subjects), we eventually obtained four factors that proved to be highly invariant (all Phi coefficients of factor similarity were greater than 0.90; see Tucker, 1951) and that were clearly interpretable as Insensitivity, Extraversion, Neuroticism, and Orderliness. Thus, it can be stated that the definition and meaning of these factors is almost identical for different (groups of) people, irrespective of their sex, age, and/or position on the four factors. Elsewhere, we have typified this approach as semi-idiographic (Van Kampen, 1981), but the term 'super-nomothetic' might be applied as well. The four invariant factors can be measured by means of Van Kampen's (1997) 4DPT or Four-Dimensional Personality Test.

The third and last problem that will be discussed here is whether the chosen set of common personality factors—in our case S, E, N, and G—might indeed be used as an alternative to the idiographic approach, given for instance Allport's (1962) claim that 'Only a complete understanding of [an individual's] personality will give us a basis for sure prediction' (p. 412). Of course, it cannot be denied that an idiographic analysis of a particular individual might result in a far more complex or richer description of his or her personality than is possible on the basis of a (relatively small) set of nomothetic dimensions, whether 'semi-idiographically' defined or not. It is true, for instance, that individual traits, if formulated in much detail, are likely to remain relatively uninformative if they are applied to other persons (see Allport, 1937, p. 302; Runyan, 1983, p. 421), although it might be added that in most of these cases the 'uninformativeness' seems to stem primarily from the intermingling of *different* personality features, not from the features themselves. However, it is equally true, as Levy (1970) has argued, that in science complexity has no value in and of itself. 'Indeed, the history of the law of parsimony suggests that the opposite is the case. What we seek in a theory is minimum complexity for any given degree of explanatory power. Thus, if one personality theory contained only two factors and the other, sixteen, the former would be preferred, provided it did as good a job in explaining and predicting behavior' (Levy, 1970, p. 77). From a nomothetic point of view, therefore, it seems not even desirable to construct a theory that will portray a person in *all* his complexity, not to speak of the fact already mentioned that the additional information—and thus the additional complexity the theory deals with—that might enhance the predictive accuracy, can achieve this only if it is defined nomothetically and set in

a framework of actuarial prediction. Hence, to investigate whether our fixed set of common personality dimensions does enough justice to the idiographic complexity of the individual case, we have to demonstrate that our set of common factors might in principle give rise to the same level of predictive accuracy as a set of personal traits obtained in each of a series of assessments of separate individuals. To accomplish this, it seems sufficient to correlate the individual traits obtained for each person with the dimensions Insensitivity, Extraversion, Neuroticism, and Orderliness, for if these correlations prove to be high, other variables of interest may be predicted with corresponding levels of predictive accuracy. In this paper we will present such a correlational study. However, as it is not possible to derive the usual (nomothetic) matrix of correlations between idiographic and nomothetic traits, a methodology suggested by Kelly's (1955) personal construct psychology has been applied in order to 'convert' the dimensions S, E, N, and G into 'pseudo-individual' traits (see below), after which within-person correlations were calculated between the two sets of personality dimensions. Furthermore, in this article we will consider the additional morphogenic issue of the patterning or organization of variables within the single case, although we will do this merely from an 'idiographically-converted' nomothetic perspective by paying attention only to the organization of the pseudo-individual factors. This part of the study was carried out in order to investigate whether morphogenic deviations from the nomothetic pattern of zero correlations between the dimensions S, E, N, and G (see Van Kampen, 1997) have any influence on the degree of explanation of the idiographic traits by the pseudo-individual factors that represent the common dimensions.

METHOD

Subjects

The subjects who participated in this study are 83 individuals who responded to a written request from their family doctors in the towns of Kampen and Almelo (in the province of Overijssel, The Netherlands) to complete a test booklet containing the two inventories described below. Altogether, we contacted three general practitioners who were all willing to co-operate in this study. The inventories were sent to 500 of their patients (250 males and 250 females, aged 20 to 50 years), resulting in a response rate of 16.6 per cent, which appears to be rather low (see also below). However, this rate can perhaps be explained in the light of the extensive amount of time required to fill in the first of the two inventories. Of the 83 subjects 53 are inhabitants of Kampen and 30 of Almelo. The total group consists of 25 male and 58 female subjects with a mean age of 35.96 years and a standard deviation of 7.67.

Instruments

All participants were sent two inventories, the INI or Idio-Nomo Inventory and the 4DPT or Four-Dimensional Personality Test. The INI, which was specifically constructed for this investigation, consists of two parts, the 'idio-part' and the 'nomo-part'. In the idio-part of the INI, the subjects were first of all requested to list the names of ten persons, beginning with their own name, and subsequently listing the names of nine other persons that they knew closely. In case they did not want to

mention the full names of their relatives and friends, subjects were allowed to mention only first names or the initials of their first or last names. Next, the participants were requested to describe themselves as accurately as possible in free format using at most ten adjective terms or separate sentences. Finally in responding to the INI, they had to rate themselves and the other nine persons previously listed on each of these (self-descriptive) idiographic terms or sentences as well as on 48 (4×12) short statements (e.g., *likes to meet people*; see also Table 1) that together constitute the 'nomo-part' of the INI and that are believed to represent the same four common and invariant personality factors as measured by means of the 4DPT. In fact, these statements were often shortened versions of more complex 4DPT items. All ratings were made on a five-point Likert scale ranging from 1 ('not applicable at all') to 5 ('wholly applicable'). Altogether, therefore, each participant had to rate in principle ten individuals on (at most) 58 personality characteristics, resulting in 580 ratings. It was expected, of course, that the traits generated to describe oneself would be evaluated mostly as 'wholly applicable'. After completing the INI, the participants had to fill in the 4DPT, a questionnaire consisting of 64 items (to be answered with 'yes' or 'no') for the measurement of the dimensions Insensitivity (S), Extraversion (E), Neuroticism (N), and Orderliness (G). Both Cronbach's α coefficients and the test–retest reliabilities of the 4DPT scales have been found to be quite satisfactory, with indices ranging from a lowest value of 0.78 for S to a highest value of 0.90 for N with respect to α (Van Kampen, 1997) and from 0.75 for G to 0.90 for E for the stability coefficients with an intra-test interval of five weeks (Van Kampen, unpublished data). As already indicated above, the 4DPT scales also proved to be practically uncorrelated, with no correlations exceeding 0.25 in a 'total' sample of about 550 subjects, although in a subsample of roughly 275 female subjects a somewhat larger correlation of -0.34 ($p < 0.001$) was found between E and N (Van Kampen, 1997). As for the validity of the 4DPT scales, expected convergence ('high') and discriminant ('low' or 'zero') correlations were obtained between these scales and, for instance, the NEO-PI scales by Costa and McCrae (1985), the FFPI scales by Hendriks (1997), and—more telling from a theoretical perspective—the scales of our SSV or Schizotypic Syndrome Questionnaire (Van Kampen, 1997; Van Kampen, unpublished data; Van Kampen, 1999, 'The SSV model: a LISREL supported description of the unfolding of the schizophrenic prodrome', in preparation).

Data analysis

In order to relate the idiographic terms or sentences to the nomothetic dimensions Insensitivity, Extraversion, Neuroticism, and Orderliness, first of all a principal components analysis was carried out on the self- and other-ratings, using as variables the 48 items contained in the nomo-part of the INI that were believed to represent these factors. As these ratings were obtained for 83 persons that were instructed to rate themselves and nine others, the principal components analysis is based in principle on a sample of 830 subjects. However, due to the fact that three participants had listed only nine persons and that on some items no ratings were given for some of the remaining 827 subjects, the actual number of subjects in the sample (after listwise deletion of missing data) was 804. Four principal components were extracted, followed by a normalized varimax rotation to simple structure. This number was primarily dictated by the expectation that the factors would represent the above-mentioned

dimensions, but proved also correct after applying Cattell's scree-test to the eigenvalues associated with all 48 components. Of course, the actual interpretation of the INI factors were based on inspection of the item loadings. As a second step in the methodology here described, for each of the 804 subjects we calculated the factor scores on each of the four rotated factors, together with the scores on four INI scales constructed on the basis of the nomo-part items that loaded 0.35 or higher on a given factor. As the first person rated by each of the participants in this study is the participant himself or herself, we might expect—given our assumption that the INI factors reflect the dimensions S, E, N, and G—that the factor and scale scores calculated for the first-rated persons are correlated with the participants' 4DPT scores. These correlations (whether disattenuated or not), therefore, will give us some additional information on how to interpret the INI factors. Most important in this investigation was, however, the re-arranging of the factor scores derived in the total group of 804 rated subjects in such a form that for each of the 83 participants a separate matrix of factor scores was obtained in which the rows represented the four INI factors and the columns the ten rated individuals. These matrices—that are similar to *fixed* construct matrices in the sense of Kelly (1955) with the ten rated individuals regarded as *elements*—were used to relate the four common INI factors to the idiographic terms and sentences obtained in the idio-part of the INI, for if a certain row of factor scores calculated for one of the 83 participants actually correlates with a certain pattern of ratings associated with a given idiographic trait—a pattern similar to a *personal* construct vector as defined by Kelly (1955)—the nomothetic and the idiographic trait must have something in common, at least for the participant who has mentioned that individual trait. Thus, for this participant, the individuals rated with high factor scores on a common trait will tend to have also high ratings on an individual trait that was applied to them, and vice versa. Multiple correlations between the (dependent) idiographic variables—still expressed in the form of personal construct vectors—and the four rows of factor scores (predictors) were also calculated. As the separate rows of factor scores are each related to a common personality factor, but at the same time mimic the patterns of scores or ratings that are associated with individual traits, the constructs or dispositions that can be assumed to lie behind those rows of factor scores will here be denoted *pseudo-individual factors*. The term 'pseudo-individual' is meant to underline that these dispositions are not real in the sense of Allport, i.e., they cannot be considered an 'organic disposition' in someone's individual life (see the Introduction). Moreover, the marking 'pseudo-individual' reminds us that these factors still refer to nomothetic dimensions. However, their idiographic relevance is clearly illustrated by the fact that they are only applicable to the single case and that their correlations and multiple correlations with any vector of ratings associated with an idiographic trait are *within-person*, not between-person correlations. It is this dual nature that makes these pseudo-individual factors appropriate to address the issue of the coverage of the individual traits by a set of common dimensions. An extra advantage of the use of these 'idiographically converted' personality dimensions consists of the possibility of investigating the exact relationships between these factors at the individual level, instead of assuming that the intercorrelations associated with these relationships are always identical to the nomothetic correlations that exist between the personality factors after which the pseudo-individual factors have been modelled. Regarding, therefore, the nomothetic correlations as average tendencies that might not hold for separate individuals, the question of the patterning of the

pseudo-individual factors has also been addressed in this article. This was done especially to find out whether the degree of coverage of the idiographic traits by the pseudo-individual factors varies—in whatever direction—with the level of correlations actually found between the four rows of factor scores associated with these pseudo-individual factors. For each of the 83 participants the degree of coverage was defined in terms of the median value obtained for the above-mentioned multiple correlations between the four rows of factor scores and each of the vectors of ratings associated with a particular idiographic trait, after which these median values were correlated with the values of the (six) within-person correlations—both taken as observed and converted to absolute values—between the pseudo-individual factors, which were also calculated for each of the 83 participants. The median values obtained for the multiple correlations were also correlated with other variables, such as the 4DPT scores for S, E, N, and G. Moreover, the average values of the six within-person correlations between the four pseudo-individual dispositions were computed to examine whether the nomothetically demonstrated independence of the 4DPT scales—and the expected corresponding independence of the four INI scales—could also be observed from an idiographic, or, more precisely, from an 'idiographically converted' nomothetic perspective. In this context, it was also determined for how many of the participating subjects this independence holds (both for each pair of factors and with respect to the number of zero correlations), when defining a zero correlation between two pseudo-individual factors as a correlation between -0.35 and 0.35.

RESULTS

Before providing the results proper, it seems meaningful to inform the reader about the means and standard deviations of the 4DPT scales obtained in this investigation. For despite the low response rate of 16.6 per cent mentioned earlier, the means and standard deviations of these scales are almost the same as those obtained previously in a sample of 1263 addressees (aged 20 to 60 years) with a response percentage of 49.6 (see Van Kampen, 1997, Table 5). In fact, using *t*-tests no significant differences were observed between the means obtained in both samples, either before ($n = 624$) or after ($n = 487$) deleting all subjects of 50 years and over in the larger sample to make the two samples more comparable in age. Hence, there seems no reason to doubt the representativeness of the results found in this study.

Table 1 mentions the loadings of the 48 items of the nomo-part of the INI that were found after varimax rotating the first four principal components. The rotated factors F1, F2, F3, and F4 explain 13.0, 12.5, 10.3, and 11.7 per cent of the total variance, respectively, mounting up to 47.5 per cent collectively. To facilitate the interpretation of the factors, the items—translated into English—are also listed in Table 1, together with an indication of on which factor they were expected to load. As can be seen, all INI items except one—item No. 39—loaded according to their postulated nature, given our criterion that to be regarded as salient a factor loading must be at least 0.35. The four factors, therefore, are clearly interpretable as Extraversion (F1), Insensitivy (F2), (low) Orderliness (F3), and Neuroticism (F4). Even the higher than expected loading of item 39 on F2 seems to make sense, because one of the characteristics associated with high Insensitivity is the conviction of being

Table 1. Varimax rotated loadings of the 48 'nomo-part' INI items representing the common 4DPT dimensions Insensitivity, Extraversion, Neuroticism, and Orderliness (factor loadings of 0.35 and higher are printed in bold type)

Item no.	Postulated nature	Item	F1	F2	F3	F4
1	Ins	Is selfish	−0.03	**0.70**	0.10	0.00
2	Ext	Is a talkative person	**0.69**	0.07	0.01	0.03
3	Neu	Frets too much	−0.15	−0.03	−0.11	**0.67**
4	Ord	Values tidiness and cleanliness	0.07	−0.09	**−0.73**	0.05
5	Ins	Easily criticizes other people	0.07	**0.64**	−0.08	0.10
6	Ext	Makes new friends easily	**0.75**	−0.05	0.02	−0.13
7	Neu	Takes a gloomy view of the future	−0.27	0.24	−0.08	**0.44**
8	Ord−	Does things haphazardly	0.25	0.19	**0.41**	0.11
9	Ins	Is complacent	0.13	**0.60**	0.07	−0.09
10	Ext	Is lively	**0.76**	0.01	−0.06	−0.08
11	Neu	Is nervous	−0.05	0.07	0.02	**0.74**
12	Ord	Is keen on order and regularity	−0.01	−0.05	**−0.77**	0.11
13	Ins	Is not much concerned about other people	−0.07	**0.38**	0.08	0.03
14	Ext	Can get some life into a party	**0.70**	0.12	0.01	−0.16
15	Neu	Gets upset easily	−0.02	0.07	−0.02	**0.75**
16	Ord	Is a real perfectionist	0.09	0.19	**−0.59**	0.14
17	Ins	Is arrogant	−0.05	**0.67**	−0.06	0.04
18	Ext	Likes to meet people	**0.73**	0.01	−0.08	−0.07
19	Neu	Is uncertain of himself/herself	−0.20	−0.06	0.03	**0.69**
20	Ord	Is set in his/her habits	−0.13	0.14	**−0.57**	0.20
21	Ins	Sees primarily the mistakes of others	−0.05	**0.68**	−0.07	0.22
22	Ext	Is able to liven things up	**0.81**	0.08	0.01	−0.11
23	Neu	Feels agitated	0.06	0.17	−0.15	**0.62**
24	Ord	Returns the things borrowed on time	−0.10	−0.16	**−0.62**	0.03
25	Ins	Acts only out of self-interest	0.08	**0.79**	0.01	0.07
26	Ext	Enjoys oneself very much at parties	**0.72**	0.02	0.08	−0.10
27	Neu	Panics easily	0.00	0.13	−0.04	**0.76**
28	Ord	Carefully plans activities	0.02	0.05	**−0.70**	0.06
29	Ins	Cares only for his/her own ideas	−0.06	**0.73**	0.01	0.13
30	Ext	Often invites people	**0.65**	−0.01	−0.09	0.04
31	Neu	Suffers from nerves	−0.04	0.05	−0.05	**0.82**
32	Ord	Values good manners	0.14	−0.08	**−0.60**	0.06
33	Ins	Can easily deceive people	0.17	**0.58**	0.14	−0.06
34	Ext−	Is silent in the company of other people	**−0.54**	−0.10	−0.03	0.22
35	Neu	Takes disappointments very hard	−0.11	0.13	−0.08	**0.69**
36	Ord	Makes high demands upon oneself	0.09	0.14	**−0.54**	0.22
37	Ins	Runs down other people's ideas	−0.04	**0.68**	0.03	0.13
38	Ext	Reacts spontaneously	**0.73**	−0.18	0.01	0.01
39	Neu	Cannot take criticisms easily	0.02	**0.41**	0.04	0.34
40	Ord−	Leaves things unfinished	0.11	0.10	**0.62**	0.15
41	Ins	Considers oneself important	0.16	**0.67**	0.06	0.01
42	Ext	Likes crowded parties	**0.59**	0.16	0.23	−0.04
43	Neu	Is overanxious	−0.10	−0.07	−0.14	**0.72**
44	Ord−	Is untidy	0.12	0.10	**0.70**	0.10
45	Ins	Puts himself/herself always first	0.03	**0.75**	0.11	0.11
46	Ext	Does easily get enthusiastic about something	**0.63**	−0.02	0.18	0.04
47	Neu	Reacts rather out-of-balance	0.04	0.28	0.25	**0.48**
48	Ord−	Often arrives late	0.11	0.27	**0.52**	0.04

superior to other persons—as witnessed, for instance, by the loadings of the INI items 17, 29, and 41—which would explain why persons scoring high on F2 'cannot take criticisms easily'.

To measure the four INI factors, four scales were constructed, that were denoted EXT, INS, ORD, and NEU, respectively. All INI scales, except the NEU scale, consisted of the 12 items originally postulated to load on one of the factors. Thus item 39, despite its loading of 0.42 on F2, was not added to the INS scale. In the NEU scale item 39 was omitted, leaving only 11 items in this scale for the measurement of F4. In the third column of Table 2, the internal consistencies (Cronbach's α) for these scales are listed, together with the α coefficients for the 4DPT scales. Both sets of values were calculated in our sample of participants, and not—as is not even possible with respect to the 4DPT—in our sample of rated subjects. It is evident that both the INI and the 4DPT scales are sufficiently reliable. Moreover, the α values obtained here for the 4DPT are nearly the same as previously reported in a relatively large sample of roughly 530 subjects (Van Kampen, 1997).

Beside scores on the four INI scales, for each rated subject the factor scores on F1, F2, F3, and F4 were calculated. In Table 2, the correlations between the INI factor scores and the INI scale scores are given, both for the 'total' sample of rated subjects and for the much smaller sample of persons who had responded to the written request of their family doctor. It can be seen that for both samples the factor scores and scale scores are very highly correlated, as was, of course, expected. In addition, Table 2 shows that the intercorrelations between the four INI scales are all lower than 0.35 (and most of them even much lower), although in the sample of rated subjects, due to its large size, some small correlations were found to differ significantly from zero. Of course, this too is as expected, not only because the INI factors are varimax factors (and thus by definition orthogonal), but also because the INI scales must be regarded as congruent measures of the (nearly uncorrelated) 4DPT scales. In the present sample of participants, the correlations between the 4DPT scales also prove to be almost zero (see Table 2). Only the correlation between E and G is somewhat larger than previously found (see Van Kampen, 1997), but even this correlation ($r = -0.34$, $p < 0.01$) cannot be considered to deviate much from zero. Perhaps most important in Table 2, it can be seen that in the group of participants relatively high correlations were found between the 4DPT scales on the one hand, and the INI factors and INI scales on the other hand. After correcting the 4DPT and INI scales for their unreliabilities (expressed by $1 - \alpha$), the convergence correlations between both instruments proved to be as high as 0.78 for S/INS, 0.91 for E/EXT, 0.85 for N/NEU, and 1.00 for G/ORD, in fact demonstrating that the above-mentioned interpretation of the factors F1, F2, F3, and F4 is not without further support. The 4DPT and INI factors, therefore, largely seem to reflect the same fundamental dimensions of personality.

Altogether, on the idio-part of the INI, the participants filled in 759 adjective terms and/or short phrases to describe themselves, ranging from a lowest number of four to a highest one of ten, the maximum number allowed in the INI. In 61 of the 83 cases the number of idiographic descriptions was found to be ten, resulting in a mean number of 9.15 self-descriptions with a standard deviation of 1.64. After correlating the number of self-descriptions with the 4DPT scales and sex and age, a significant positive correlation of 0.36 ($p < 0.01$, $n = 80$) was found between this number and E. Thus, extravert subjects use slightly more terms to describe their own personality than introvert subjects. All other correlations were both not significant and practically zero.

Table 2. Correlations between the INI factors and INI scales for A: the sample of rated subjects ($n = 804$–826) and B: the sample of participants ($n = 81$–83). For the sample of participants the correlations between the 4DPT scales, the INI factors, and the INI scales are also given ($n = 79$–82) as well as the α coefficients ($n = 73$–83) for the 4DPT and INI scales and the correlations between the 4DPT and INI scales corrected for attenuation (correlations for corresponding variables are printed in bold type; corrected correlations are printed in brackets)

Sample	Factor/scale	α	F1	F2	F3	F4	EXT	INS	ORD	NEU	E	S	G	N
A	F1		—											
	F2		−0.00	—										
	F3		−0.00	0.00	—									
	F4		−0.00	−0.00	0.00	—								
	EXT		**0.99*****	0.04	0.04	−0.10**	—							
	INS		0.05	**0.99*****	0.05	0.09*	0.08*	—						
	ORD		−0.06	−0.07*	**−0.99*****	0.06	−0.11**	−0.12**	—					
	NEU		−0.11**	0.13***	−0.05	**0.98*****	−0.20***	0.20***	0.10**	—				
B	F1		—											
	F2		−0.06	—										
	F3		0.02	0.21	—									
	F4		−0.07	−0.07	−0.01	—								
	EXT	0.89	**0.99*****	−0.01	0.06	−0.16	–				**(0.91)**			
	INS	0.85	0.01	**0.98*****	0.27*	0.04	0.03	—				**(0.78)**		
	ORD	0.81	−0.09	−0.27*	**−0.98*****	0.12	−0.13	−0.33**	—				**(1.00)**	
	NEU	0.91	−0.16	0.02	−0.04	**0.99*****	−0.26*	0.12	0.14	—				**(0.85)**
	E	0.87	**0.78*****	0.21	0.19	−0.08	**0.80*****	0.25*	−0.25*	−0.12	—			
	S	0.78	0.00	**0.65*****	0.18	−0.06	0.01	**0.63*****	−0.23*	0.01	0.11	—		
	G	0.78	−0.21	−0.20	**−0.83*****	0.07	−0.24*	−0.24*	**0.86*****	0.10	−0.34**	−0.18	—	
	N	0.89	−0.11	−0.21	−0.14	**0.76*****	−0.19	−0.15	0.24*	**0.76*****	−0.28*	0.00	0.24*	—

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

Compared with the ratings of the other nine subjects, most self-ratings in the idio-part of the INI were found to deviate substantially from the midpoint (3) of the five-point scales used, as was, of course, expected. Actually, the means of the absolute values of these deviation scores proved to be 1.74 (with a standard deviation of 0.51) for the self-ratings—in this case indicating that most participants evaluated their own self-generated traits as 'wholly applicable'—and 1.17 (SD = 0.78) for the ratings of the nine other subjects. For the ratings on the 48 five-point scales in the nomo-part of the INI, no such distributional asymmetry was observed, finding that the means (and standard deviations) of the absolute values of the deviation scores were 1.12 (SD = 0.78) for the self-ratings and 1.05 (SD = 0.77) for the other-ratings.

For 728 of the 759 individual traits, (within-person) correlations and multiple correlations (R) could be calculated between the vectors of ratings for these traits for the (usually) ten individuals—the participants themselves and their nine relatives/friends—listed in the INI on the one hand, and the rows of factor scores for F1, F2, F3, and F4, representing the pseudo-individual factors on the other hand. In Table 3, the means and standard deviations of these 728 correlations—now converted to absolute values—and multiple correlations are given, together with the minima and maxima of these correlations and multiple correlations. The pseudo-individual factors, associated with the nomothetic factors F1, F2, F3, and F4, are here denoted PF1, PF2, PF3, and PF4. Although, in principle, the above-mentioned distributional asymmetry should have an impact on these correlations, we decided to calculate these figures on the full 'ten-element vectors' of ratings and factor scores, for these correlations seemed to us somewhat more dependable than the correlations calculated after considering only nine individuals (that is, after excluding the self-ratings) (see, however, the Discussion). As Table 3 clearly illustrates, on average the four pseudo-individual factors correlate nearly to the same extent with the individual traits. Furthermore, the ranges of these correlations, both expressed by the four standard deviations and the minimum and maximum values, are almost identical. The same impression results from inspecting Figure 1, in which the correlations (absolute values) and multiple correlations of the pseudo-individual factors PF1, PF2, PF3, and PF4 with each individual trait—after categorizing them into the classes 1–10 (with 1 = r or $R < 0.10$; 2 = 0.10–0.19; 3 = 0.20–0.29; etc)—are graphically displayed, providing for each class the frequencies and percentages associated with them. It is clear from Table 3 and especially from Figure 1 that most within-person R values are relatively high, with only 11.1 per cent of all multiple correlations lower than $R = 0.60$. The coverage, therefore, of the idiographic traits by the four pseudo-individual factors, when taken collectively, seems highly remarkable. The

Table 3. Means, standard deviations, and minimum and maximum values of the correlations (r, absolute values) and multiple correlations (R) between all idiographic traits (I, $n = 728$) and the pseudo-individual factors PF1 (Ext), PF2 (Ins), PF3 (Ord−), and PF4 (Neu)

	r I/PF1	r I/PF2	r I/PF3	r I/PF4	R I/PF
Mean	0.38	0.40	0.39	0.38	0.80
SD	0.25	0.25	0.25	0.26	0.15
Minimum	0.00	0.00	0.00	0.00	0.13
Maximum	0.96	0.98	0.96	0.97	1.00

PF	r or R class	freq	perc
1	1	121	16.62
	2	96	13.19
	3	95	13.05
	4	92	12.64
	5	84	11.54
	6	71	9.75
	7	68	9.34
	8	63	8.65
	9	31	4.26
	10	7	0.96
2	1	105	14.42
	2	79	10.85
	3	96	13.19
	4	87	11.95
	5	97	13.32
	6	92	12.64
	7	73	10.03
	8	48	6.59
	9	41	5.63
	10	10	1.37
3	1	101	13.87
	2	110	15.11
	3	111	15.25
	4	86	11.81
	5	76	10.44
	6	66	9.07
	7	70	9.62
	8	59	8.10
	9	36	4.95
	10	13	1.79
4	1	120	16.48
	2	105	14.42
	3	99	13.60
	4	77	10.58
	5	85	11.68
	6	72	9.89
	7	55	7.55
	8	56	7.69
	9	36	4.95
	10	23	3.16
1-4	1	0	0.00
	2	1	0.14
	3	2	0.27
	4	15	2.06
	5	18	2.47
	6	45	6.18
	7	81	11.13
	8	146	20.05
	9	218	29.95
	10	202	27.75

Figure 1. Frequencies, percentages, and corresponding bar graphs of categorized (*r* or *R* class) correlations (*r*) and multiple correlations (*R*) between idiographic traits and pseudo-individual factors (PF)

within-person correlations between the idiographic variables and the separate rows of factor scores are (much) lower on the average.

Although the coverage of the individual traits was found to be rather extensive, the above-mentioned R values refer only to the 728 idiographic traits taken as a group of variables. That is, the mean value of R (Table 3) is rather uninformative with respect to the coverage of the individual traits mentioned by each particular subject. To index, therefore, the individual coverage of the idiographic traits, the median of the R values obtained for each participant's idiographic traits—here denoted med$R$—was calculated, after which the mean (and standard deviation) of this median value was computed to find out whether the individual coverage was substantial or not. The med$R$ values ($n = 81$) were found to have a mean of 0.82 and a standard deviation of (only) 0.08, evidently signifying that the coverage of the idiographic traits by the four pseudo-individual factors was also very extensive for most persons individually. The minimum and maximum values of med$R$ proved to be 0.54 and 0.98, respectively.

Given our finding that the INI factors F1, F2, F3, and F4 could be interpreted as Extraversion, Insensitivity, (low) Orderliness, and Neuroticism, respectively, the same interpretation might be expected to hold for the pseudo-individual factors PF1, PF2, PF3, and PF4. However, in order to examine the validity of this statement specifically from an idiographically converted nomothetic perspective, the prediction was made that among the idiographic traits that were found to correlate to a high degree with a pseudo-individual factor, many would seem to be related as regards content to the INI or 4DPT factor after which that pseudo-individual factor was modelled. Therefore, selecting the 20 individual traits that correlated the highest with PF1, PF2, PF3, or PF4, we inspected their contents. As may be concluded from Table 4—in which the 4×20 selected terms or sentences are translated into English—these contents are usually very similar to the contents of the 4DPT or INI items loading on the factors E or F1, S or F2, G or F3, and N or F4, respectively. Hence, both the nomothetic 4DPT or INI factors and the pseudo-individual traits stemming from them clearly refer to the same basic personality factors.

Altogether we found 28 idiographic trait terms or sentences (see Table 5) that correlated less than 0.30 with any of the four pseudo-individual factors and that, therefore, are evidently not covered by these factors. Although many of these individual trait terms as regards content seem to be related to the 4DPT or INI dimensions as well, the almost 'zero' correlations now obtained for them clearly suggest that the meaning of these terms deviates from the meaning usually attributed to them, at least for the participants that have mentioned these 28 terms to describe their personality. We will return to this subject in the Discussion.

Table 6 mentions the means and standard deviations, together with the minimum and maximum values, of the correlations between each pair of pseudo-individual factors computed for each of the participants in this study. This table clearly shows that the means of these correlations are near to zero, which is very much as was expected. However, it is also clear that the ranges of these correlations, reflected by the standard deviations and the minimum and maximum values, are rather wide, which suggests that the nomothetic independence of the 4DPT factors S, E, N, and G—here 'translated' ultimately into the independence of the pseudo-individual factors PF1, PF2, PF3, and PF4—does not hold for all individuals. Defining a 'zero' correlation between two pseudo-individual factors as a correlation between -0.35

Table 4. The 4×20 idiographic self-descriptions with the highest (positive or negative) correlations with the pseudo-individual factors PF1, PF2, PF3, or PF4

	PF1			PF2	
1	Spontaneous, pleasant	0.96	1	Kind	−0.98
2	Extravert, outgoing	0.95	2	Amicable	−0.96
3	Mixing well with others	0.93	3	Interested in other people	−0.96
4	Pacemaker at parties	0.92	4	Frank	−0.93
5	Uncertain	−0.92	5	Easy (indolent)	−0.92
6	Socially skilled	0.91	6	Dutiful	−0.92
7	Likes to pry into everything	0.91	7	Home-loving	−0.92
8	Neatness	−0.89	8	Sometimes aware of selfishness	0.91
9	Sociability	0.88	9	Ready to help	−0.91
10	Does not show feelings easily	−0.88	10	Masking his/her true feelings	−0.91
11	Quiet	−0.88	11	Pliable	−0.90
12	Has the gift of the gab	0.87	12	Companionable	−0.90
13	Spontaneous	0.87	13	Helping other people, responsible	−0.89
14	Professionally skilled	−0.87	14	Is afraid of rows	−0.89
15	Home-loving	−0.87	15	Committed	−0.88
16	Quiet	−0.87	16	Warm-hearted	−0.87
17	Headstrong	0.86	17	Gets easily enthusiastic	−0.87
18	Shy	−0.86	18	Cheerful	−0.87
19	Lively	0.85	19	Good listener	−0.87
20	Sociable, to be sure	0.85	20	Pleasant	−0.87
	PF3			PF4	
1	Tidy	−0.96	1	Disappointed	0.97
2	Dainty	−0.95	2	Not afraid to say things to others	−0.96
3	Purposeful	−0.93	3	Often seeing danger	0.95
4	Orderly/punctual	−0.93	4	Tense	0.94
5	Optimistic	0.92	5	Feels uncomfortable in company	0.93
6	Perfectionist	−0.92	6	Quickly anxious	0.93
7	Likes tidying up	−0.92	7	Order + regularity	0.93
8	Precise in doing his job	−0.92	8	Shy	0.92
9	Slovenly	0.91	9	Uncertain in his job	0.92
10	Not giving up	−0.91	10	Restless	0.92
11	Responsive to other people	−0.91	11	Sensible	−0.92
12	Careful	−0.90	12	Does not express oneself	0.91
13	Neat	−0.89	13	Easily worried about family	0.91
14	Precise	−0.89	14	Little self-confidence	0.91
15	Precise	−0.89	15	Flexible	−0.91
16	Busy	0.88	16	Down-to-earth	−0.91
17	Hard-working	−0.88	17	Always very thoughtful	0.90
18	Not afraid to say things to others	−0.88	18	Afraid of certain people	0.90
19	Sometimes quiet (hesitant)	−0.88	19	Nervous	0.90
20	Careless (not clearing things away)	0.87	20	Not giving up	−0.90

Table 5. Twenty-eight idiographic self-descriptions with correlations < 0.30 with PF1, PF2, PF3, and PF4

Self-confident
Impatient
Makes too high demands on oneself
Obstinate
Engaged in others
Living regularly
Forgetful
Wanting to do too much
Fair
I regard myself as ugly
Late riser
Sociability/keeping social contacts
Fanatical
Uncertain
Waiting to see which way the cat jumps
Profound
Skilful
Fair
Creative in searching for solutions
Is sometimes unable to delegate things
Impulsive
Responsible
Enjoying life
Very sweet
Reliable
Always busy
Inquiring
Afraid of dying

Table 6. Means, standard deviations, and minimum and maximum values of the within-person correlations ($n = 81$) between the pseudo-individual factors PF1 (Ext), PF2 (Ins), PF3 (Ord−), and PF4 (Neu). In the bottom row the percentages of 'zero' correlations are listed, defining a 'zero' correlation as a correlation between −0.35 and 0.35

	r PF1/PF2	*r* PF1/PF3	*r* PF1/PF4	*r* PF2/PF3	*r* PF2/PF4	*r* PF3/PF4
Mean	0.05	0.17	−0.02	−0.06	−0.20	−0.03
SD	0.41	0.37	0.41	0.38	0.40	0.41
Minimum	−0.73	−0.69	−0.84	−0.90	−0.92	−0.94
Maximum	0.84	0.84	0.83	0.75	0.61	0.93
% r = '0'	59.26	54.32	60.49	58.02	49.38	51.85

and 0.35, Table 6 lists the percentages of subjects (participants) for which a correlation is 'zero'. These percentages, with a mean of 55.6 per cent, imply that for 50 to 60 per cent the correlation between any two pseudo-individual factors is 'zero', and for 40 to 50 per cent deviating from 'zero'. Of course, it may occur that the correlations between more than two pseudo-individual factors are 'non-zero'. In fact, of the 81 participants for which these correlations could be calculated only two (2.5 per cent) did show a pattern of all six within-person correlations between the four pseudo-individual factors lying between −0.35 and 0.35. For 13 participants (16.0 per

cent) the number of 'zero' correlations proved to be five, for 22 subjects (27.2 per cent) four, for 24 (29.6 per cent) three, for 14 (17.3 per cent) two, for five (6.2 per cent) one, whereas for only one participant (1.2 per cent) all six factor correlations were found to deviate from 'zero'. We might conclude, therefore, that the patterning of the factors PF1, PF2, PF3, and PF4 is often dissimilar to the orthogonal pattern associated with the 4DPT dimensions S, E, N, and G.

Given this findings, the question was addressed of whether these deviations from 'zero' have any influence on the degree of coverage of the idiographic traits for each separate individual. In Table 7 the correlations are shown between the value of med$R$, obtained for each participant, and the values of the six correlations (r) between the pseudo-individual factors, also obtained for each participant. The latter values were taken both as they were observed and according to their absolute values. Moreover, in Table 7 the correlations are presented between the values of med$R$ and each participant's scores on the S, E, N, and G scales of the 4DPT, and his or her age and sex. As can be seen from this table, of the correlations with the 12 r values only one is significant (the correlation with the correlation between PF1 (=Ext) and PF4 (=Neu)), although relatively low (-0.34; $p < 0.01$). It seems, therefore, that the degree of coverage of the idiographic traits for each separate individual is practically unrelated to their morphogenic pattern of correlations between the pseudo-individual factors. This conclusion holds also with respect to the correlations found for the 4DPT scales and for sex and age, notwithstanding the fact that the coverage of the idiographic traits was found to be significantly correlated ($p < 0.05$) with the 4DPT scores S (-0.28), E (-0.23), and G (0.23). However, the multiple

Table 7. Correlations of med$R$ with the values calculated for each participant of the correlations (as observed and taken absolutely) between the pseudo-individual factors ($n = 81$) and with the 4DPT scales S, E, N, and G, and sex and age ($n = 79$–81)

	med$R$
r PF1/PF2	−0.07
r PF1/PF3	0.08
r PF1/PF4	−0.34**
r PF2/PF3	0.01
r PF2/PF4	−0.07
r PF3/PF4	−0.03
r(abs) PF1/PF2	0.13
r(abs) PF1/PF3	0.10
r(abs) PF1/PF4	0.05
r(abs) PF2/PF3	0.18
r(abs) PF2/PF4	0.02
r(abs) PF3/PF4	0.05
S	−0.28*
E	−0.23*
N	0.12
G	0.23*
Sex	0.13
Age	0.15

*$p < 0.05$; **$p < 0.01$.

correlation between these 4DPT scores and med$R$ proved to be somewhat higher (0.38; $p < 0.001$), implying that the individual coverage of the idiographic traits is somewhat greater for subjects low on Insensitivity and Extraversion, and high on Orderliness.

DISCUSSION

The most important result of this investigation is, without any doubt, the high degree of coverage of the idiographic traits—both as a group of variables and with respect to the traits mentioned by each individual participant in this study—by the four nomothetic dimensions Insensitivity (S), Extraversion (E), Neuroticism (N), and Orderliness (G) that we have postulated in our model of personality (Van Kampen, 1993, 1996, 1997). In this investigation these personality dimensions have been measured by a specifically constructed inventory—the INI or Idio-Nomo Inventory—in order to convert the nomothetic dimensions—normally measured by means of the 4DPT or Four-Dimensional Personality Test (Van Kampen, 1997)—into four 'pseudo-individual' or 'idiographically converted' factors, thereby making it possible—as was at least expected—to relate (with the aid of within-person correlations and multiple correlations) the idiographic variables to the nomothetic dimensions. It was found that only 11.1 per cent of the multiple correlations (R) between each individual trait and the four pseudo-individual dimensions proved to be lower than $R = 0.60$, while the mean of each participant's median value of R (med$R$), representing the coverage for each separate subject, was as high as 0.82, with a standard deviation of only 0.08. The correlations of the individual traits with the pseudo-individual factors, each considered separately, were much lower on the average (means: 0.38–0.40), although also some very high correlations were observed. Furthermore, it could be demonstrated that the conversion of the nomothetic dimensions into pseudo-individual factors does indeed make sense, for the idiographic descriptions correlating highest with the four pseudo-individual factors proved to be very similar with regard to their contents to the items contained in the 4DPT scales, which implies that the nomothetic dimensions and the pseudo-individual factors basically refer to the same personality constructs. Also, the means of the correlations between the pseudo-individual factors calculated for each subject separately were found to be almost 'zero' (the highest mean correlation was -0.20), reflecting that the (nomothetic) independence of the 4DPT dimensions could also be observed after converting them into pseudo-individual factors. The conclusion, therefore, seems wholly warranted that most idiographic traits, although in fact resulting in a far more complex or richer description of anyone's individual personality, can be simply located in the nomothetic framework of the four personality dimensions mentioned above. Especially if we realize that complexity has no value in science in and of itself, and that the law of parsimony dictates that we must strive at scientific theories with minimum complexity for any given degree of explanatory power (Levy, 1970), it seems clear that our chosen set of four common and invariant 4DPT factors might indeed be used as an alternative to the idiographic approach. The same conclusion can be drawn when taking into account that the independence of the idiographically converted factors certainly does not hold for all individuals. In fact, of the 83 participants in this study only two individuals were found with all six

intercorrelations for the pseudo-individual factors lying between −0.35 and 0.35, i.e., the range of values supposed in this investigation to denote a 'zero' correlation, while a correlation of this magnitude between any two pseudo-individual factors could be observed only for about 50 to 60 per cent of the participants. Despite this finding, which is in line with Loevinger's (1994) criticism of the fixed correlational (zero) structure that is assumed to apply to all people in nomothetic models, the individual coverage of the idiographic traits—indexed by med$R$—proved to be practically independent from the values of the intercorrelations of the pseudo-individual factors that could be calculated for each separate participant. Likewise, the individual coverage was not found to be influenced to any practically significant degree by each participant's (now independent) 4DPT scores (and by his or her sex and age). Therefore, the nomothetic assumption of the orthogonality of the dimensions Insensitivity, Extraversion, Neuroticism, and Orderliness, although in fact only valid as an aggregate-type proposition and not as a general-type proposition (Bakan, 1969), has no consequences with respect to the degree of coverage by these dimensions. However, the multiple correlation between med$R$ and the 4DPT scores for S, E, and G, being 0.38 ($p < 0.001$), was found to be somewhat more deviating from zero, indicating on the basis of the separate correlations for these three scales (that were all significant at the 0.05 level, but very low) that the individual coverage is somewhat higher for subjects scoring low on Insensitivity and Extraversion, and high on Orderliness.

The above-mentioned conclusion that most idiographic traits can be simply located in the nomothetic framework of the 4DPT dimensions might be challenged by the observation that in 61 of the 83 cases the number of idiographic descriptions was found to be equal to the maximum number (ten) allowed in the INI, for this observation seems to indicate that the mean number of 9.15 descriptors now obtained in the study is actually much lower than the mean number of traits that could be arrived at if the participants were left completely free to fill in as many terms or sentences as they deemed necessary. Arguing, therefore, that ten idiographic traits are far from being most idiographic traits, this observation would even suggest that other results might have been found in this study, although not necessarily implying a lower (or higher) degree of coverage of idiographic traits. However, according to Allport (1955), the number of dispositions that are necessary to describe the essential characteristics of an individual—exactly the type of disposition that is asked for in the INI—normally varies between five and ten, with an average number of seven. It seems clear, therefore, that most of the idiographic traits generated by the present procedure refer to these essential characteristics, and that the relatively high number of idiographic terms or sentences filled in in this instrument is simply due to the fact that the INI format (in this case, the available space for noting responses) seems very inviting to write down such a large number.

One other problem perhaps challenging our conclusion that idiographic traits can be expressed in most cases as linear combinations of the idiographically converted nomothetic factors S, E, N, and G, relates to the above-mentioned distributional asymmetry with respect to the values of self-ratings as opposed to the values of other-ratings in the idio-part of the INI, for it seems clear that this asymmetry, at least in principle, must have some impact on the magnitude of the within-person correlations and multiple correlations. Moreover, in rating, for instance, 20 subjects (including 'self' and 19 others) instead of ten, the effect of this asymmetry on the magnitude of

the correlations would seem to lessen, which might even suggest that the proper values of the within-person correlations and multiple correlations can only be obtained after excluding self-ratings. Although the respective correlations reported in the Results section considered all rated subjects (self and up-to-nine others), actually the same analyses were also conducted after discarding the self-ratings in the vectors of rating and factor scores. Fortunately, a comparison of both investigations showed their results to be only very slightly affected (although always in the direction of a greater degree of coverage in the latter case). For instance, instead of a mean R of 0.80 with a standard deviation of 0.15, the 'without self' mean R proved to be 0.82 with an SD of 0.14. Likewise, the mean med$R$, originally found to be 0.82 (SD = 0.08), was now found to be 0.85 with an SD of 0.07. Finally, instead of finding only 11.1 per cent of all R values lower than $R = 0.60$ originally, the corresponding figure now proved to be 8.4 per cent.

The fact that most idiographic traits are found to be strongly related to the nomothetic dimensions Insensitivity, Extraversion, Neuroticism, and Orderliness (if used in combination and converted into pseudo-individual factors), seems to be substantially corroborated by the results of a study by Schiller, Tellegen and Evens (1995). In their study, 12 individuals were invited to generate the terms or sentences they use in describing 100 acquaintances, to sort these terms or sentences into groups of highly similar trait descriptors, and to use the two or three trait descriptors that they believed to be most representative for each separate group to rate each acquaintance on each of these summary terms or phrases. This was followed by the extraction and varimax rotation of the principal components with eigenvalues greater than or equal to 1 from each matrix of within-person correlations between the summary descriptors, after which the 92 (out of the 112) rotated factors that were found to have at least three loadings exceeding 0.35 were rated by 23 judges for their degree of similarity with nine sets of selected adjectives representing the nomothetic dimensions of the Big Five—including three different sets of adjectives for the fifth Big Five factor, alternately interpreted as Intellect (e.g., Goldberg, 1992), Openness to Experience (McCrae and Costa, 1985a), or Conventionality (Tellegen and Waller, 1987)—and the dimensions Positive Evaluation and Negative Evaluation introduced by Tellegen and Waller (1987). Using the average ratings (which were found to be highly reliable) to evaluate the strength of the relationship of each of these nine dimensions with each subject's set of intra-individual factors, it could be demonstrated that the Big Five dimensions Extraversion, Agreeableness, Conscientiousness, and Neuroticism emerged with at least 'some resemblance' to one or more intra-individual factors in at least 50 per cent of the individual data sets. The other nomothetic dimensions were apparently not as salient. As the four Big Five dimensions mentioned are more or less congruent with the 4DPT dimensions Extraversion, Insensitivity (reversed), Orderliness, and Neuroticism, respectively (Van Kampen, 1996), these results evidently confirm the results found in the present investigation. However, unlike the procedure that we have followed, the idiographic descriptors in the study by Schiller *et al.* (1995) were not related to the nomothetic factors by the 12 participants themselves, but by a group of raters. That such a content rating study might result in the incorrect alignment of idiographic factors (or separate descriptors) with nomothetic dimensions can be seen in Table 5, in which some of the idiographic terms or sentences mentioned by some participants in our study, such as 'obstinate', 'keeping social contacts', 'uncertain', and 'living regularly' seem to be

clearly related to the 4DPT dimensions S, E, N, and G, respectively, but nevertheless have been found to correlate less than 0.30 with the idiographically converted equivalents of these dimensions. The strength of our own investigation, therefore, seems to be that the placement of the idiographic descriptors into our four-dimensional nomothetic framework is always dependent on the judgement of the subjects themselves by filling in the Idio-Nomo Inventory, which guarantees that the 'translation' of the idiographic traits into nomothetic factors is based on idiographic principles.

The ascertainment that the nomothetic dimensions Insensitivity, Extraversion, Neuroticism, and Orderliness determine a useful framework for the coverage of idiographic descriptors naturally evokes the question of whether this framework must be extended with one or more other factors in order to result in an even higher degree of coverage, both with respect to the relative frequency in which these idiographic traits are covered and with respect to the number of subjects for whom this coverage holds. Of course, the (lexical) Big Five or the (nonlexical) Five Factor Model (FFM) (see for this distinction John and Robins, 1993) suggests a fifth dimension, variously interpreted as, for instance, Intellect, Imagination, Autonomy, Creativity, or Openness to Experience (see, e.g., Costa and McCrae, 1985; Goldberg, 1992; Hendriks, 1997; Johnson, 1994; Saucier, 1992). Moreover, some other factors beyond the Big Five have also been claimed to exist, although in this case these factors largely seem to lie outside the domain of personality traits as conventionally defined (Saucier and Goldberg, 1998). At the same time, however, the above-mentioned study by Schiller *et al.* (1995) suggests that the addition of a pseudo-individual factor, modelled after one of the interpretations of the fifth Big Five or FFM dimension cannot be expected to be of much importance, because in this study it was found that the sets of adjectives selected to represent the nomothetic dimensions Conventionality, Intellect, and Openness to Experience emerged in, respectively, three, five, or two of the 12 data sets, if the intraindividual factors were rated on average to bear at least 'some resemblance' to a comparison set. Our own Table 5 is also illustrative in this respect, for if in our study many descriptors had been found with a content exclusively related to 'factor 5', the measurement of only the pseudo-individual factors PF1, PF2, PF3, and PF4 would have resulted in the listing in this table of those descriptors. However, Table 5 mentions only 28 of the 759 adjective terms or phrases that were found to correlate less than 0.30 with these pseudo-individual factors, and of these 28 descriptors only three—'profound', 'creative in searching for solutions', and 'inquiring'—seem to be related as regards content with the fifth Big Five dimension. Thus we may conclude that the idiographic traits in our study do not primarily refer to, among others, Intellect or Openness to Experience. However, if many (S, E, N, and G related) descriptors filled in in the INI were also to be at least marginally related to 'factor 5', the addition of a fifth pseudo-individual factor that represents this nomothetic dimension would certainly enhance the level of the multiple correlations found between the idiographic traits and the pseudo-individual factors, if compared to the level now obtained. To shed at least some light upon this issue, the rater-based VZM or 'Free Self-Description Method' quotations (SPOLAP, 1987b) were consulted for the dimensions Education (EDU) and Creativity (CRE)—both assumed by us to reflect 'factor 5'—for the idiographic trait descriptors generated in a Dutch and Flemish sample of more than 3000 subjects (SPOLAP, 1987a) using a method similar to the

free-response description approach introduced by Pervin (1976) and Turner and Gilliland (1979). After coding the idiographic terms or phrases in our own study with the quotation values available in the VZM list—this proved to be possible for 566 of the 759 descriptors—we first of all calculated scores for EDU and CRE for each participant by summing up the quotation values obtained for each idiographic trait and multiplying these sums by $10/q$, in which q is the number of descriptions for which a quotation has been found in the VZM list. The scores for EDU and CRE were found to correlate 0.56 ($p < 0.001$), indeed demonstrating that the dimensions Education and Creativity are (modestly) related. However, significant but lower correlations were also found between EDU and N (-0.34) and between CRE and N (-0.24), CRE and E (0.42), and CRE and EXT (0.34), indicating that the variables selected here to represent 'factor 5' are not completely independent from the (nomothetic) 4DPT or INI structure. Of the 566 adjective terms and sentences for which quotation values were available, 42 (=7.4 per cent) were found to be at least 'slightly related' (=quotations between -20 and -10 and between 10 and 20) to Education, and 37 (=6.5 per cent) to Creativity. Because these figures are relatively small, it seems safe to conclude that the representation in the INI of a pseudo-individual factor reflecting, for instance, Intellect or Openness to Experience would hardly lead to the demonstration of higher multiple correlations with idiographic traits. The necessity, therefore, of an extension of the present 4DPT with a fifth invariant scale for the measurement of such a Big Five or Five Factor Model dimension does not seem to hold, at least if the inventory is used to measure the personality variations most often associated with the idiographic self-descriptions found in a normal population. However, from a clinical perspective, the addition of a fifth invariant scale, specifically measuring Openness to Experience (or some other dimension conceptually related to this construct), might be investigated, for there are several indications (see, e.g., Rawlings and Freeman, 1997; Lynn and Rhue, 1988; Allen and Coyne, 1995) that high positions on such a dimension are related to schizotypy and vulnerability to psychotic experience. We might conclude, therefore, that although (a dimension linked up with) Openness to Experience does not seem to be an important factor for most normal subjects, the same dimension might be regarded as a factor of clinical relevance.

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REFERENCES

Allen JG, Coyne L. 1995. Dissociation and vulnerability to psychotic experience. *Journal of Nervous and Mental Disease* **183**: 615–622.

Allport GW. 1937. *Personality: A Psychological Interpretation*. Holt: New York.

Allport GW. 1955. *Becoming: Basic Considerations for a Psychology of Personality*. Yale University Press: New Haven.

Allport GW. 1961. *Pattern and Growth in Personality*. Rinehart and Winston: New York.
Allport GW. 1962. The general and the unique in psychological science. *Journal of Personality* **30**: 405–422.
Allport GW. 1965. *Letters from Jenny*. Harcourt, Brace and World: New York.
Bakan D. 1969. *On Method: Toward a Reconstruction of Psychological Investigation*. Jossey-Bass: San Francisco.
Baldwin AL. 1942. Personal structure analysis: a statistical method for investigation of the single personality. *Journal of Abnormal and Social Psychology* **37**: 163–183.
Bem DJ, Allen A. 1974. On predicting some of the people some of the time: the search for cross-situational consistencies in behavior. *Psychological Review* **81**: 506–520.
Block J. 1995. A contrarian view of the five-factor approach to personality description. *Psychological Bulletin* **117**: 187–215.
Bonarius JC. 1969. De eksperimentele benadering van de individuele kliënt ['The experimental approach to the individual client']. *Nederlands Tijdschrift voor de Psychologie* **24**: 569–579.
Cattell RB (Ed.). 1966. *Handbook of Multivariate Experimental Psychology*. Rand McNally: Chicago.
Costa PT Jr, McCrae RR. 1985. *The NEO Personality Inventory Manual*. Psychological Assessment Resources: Odessa, FL.
Costa PT Jr, McCrae RR. 1992. Four ways five factors are basic. *Personality and Individual Differences* **13**: 653–665.
Dawes RM, Faust D, Meehl PE. 1993. Statistical prediction versus clinical prediction: improving what works. In *A Handbook for Data Analysis in the Behavioral Sciences: Methodological Issues*, Keren G, Lewis C (eds). Erlbaum: Hillsdale, NJ; 351–367.
De Groot AD. 1966. *Methodologie: Grondslagen van Onderzoek en Denken in de Gedragswetenschappen*. [*Methodology: Foundations of Research and Theory in the Behavioural Sciences*]. Mouton: Den Haag.
Eysenck HJ. 1947. *Dimensions of Personality*. Routledge & Kegan Paul: London.
Eysenck HJ. 1967. *The Biological Basis of Personality*. Thomas: Springfield.
Eysenck HJ. 1992. Four ways five factors are *not* basic. *Personality and Individual Differences* **13**: 667–673.
Eysenck HJ. 1994a. The Big Five or Giant Three: criteria for a paradigm. In *The Developing Structure of Temperament and Personality from Infancy to Adulthood*, Halverson CF, Kohnstamm GA, Martin RP (eds). Erlbaum: Hillsdale, NJ; 37–51.
Eysenck HJ. 1994b. The importance of theory in the taxonomy of personality. In *Personality Psychology in Europe*, Vol. 5, De Raad B, Hofstee WKB, Van Heck GL (eds). Tilburg University Press: Tilburg; 6–13.
Eysenck HJ, Eysenck SBG. 1969. *Personality Structure and Measurement*. Routledge & Kegan Paul: London.
Gibbons H, Rammsayer TH. 1999. Differential effects of personality traits related to the P-ImpUSS dimension on latent inhibition in healthy female subjects. *Personality and Individual Differences* **27**: 1157–1166.
Goldberg LR. 1992. The development of markers for the Big-Five factor structure. *Psychological Assessment* **4**: 26–42.
Goldberg LR. 1993. The structure of phenotypic personality traits. *American Psychologist* **48**: 26–34.
Goldberg LR, Rosolack TK. 1994. The Big Five factor structure as an integrative framework: an empirical comparison with Eysenck's P–E–N model. In *The Developing Structure of Temperament and Personality from Infancy to Adulthood*, Halverson CF, Kohnstamm GA, Martin RP (eds). Erlbaum: Hillsdale, NJ; 7–35.
Hendriks AAJ. 1997. The construction of the Five-Factor Personality Inventory (FFPI). Dissertation, Rijksuniversiteit Groningen, Netherlands.
Holt RR. 1962. Individuality and generalization in the psychology of personality. *Journal of Personality* **30**: 377–404.
John OP, Robins RW. 1993. Gordon Allport: father and critic of the Five-Factor model. In *Fifty Years of Personality Psychology*, Craik KH, Hogan R, Wolfe RN (eds). Plenum: New York; 215–236.

Johnson JA. 1994. Clarification of factor five with the help of the AB5C model. *European Journal of Personality* **8**: 311–334.
Kelly GA. 1955. *The Psychology of Personal Constructs*. Norton: New York.
Kleinmuntz B. 1990. Why we still use our heads instead of the formulas: toward an integrative approach. *Psychological Bulletin* **107**: 296–310.
Kluckhohn CM, Murray HA. 1953. Personality formation: the determinants. In *Personality in Nature, Society, and Culture*, Kluckhohn CM, Murray HA, Schneider DM (eds). Knopf: New York; 53–67.
Lamiell JT. 1981. Toward an idiothetic psychology of personality. *American Psychologist* **36**: 276–289.
Lamiell JT. 1990. Explanation in the psychology of personality. In *Annals of Theoretical Psychology*, Vol. 6, Robinson DN, Mos LP (eds). Plenum: New York; 153–192.
Levy LH. 1970. *Conceptions of Personality: Theories and Research*. Random: New York.
Loevinger J. 1994. Has psychology lost its conscience? *Journal of Personality Assessment* **62**: 2–8.
Lynn SJ, Rhue JW. 1988. Fantasy proneness: hypnosis, developmental antecedents and psychopathology. *American Psychologist* **43**: 35–44.
McCrae RR, Costa PT Jr. 1985a. Updating Norman's "adequate taxonomy": intelligence and personality dimensions in natural language and in questionnaires. *Journal of Personality and Social Psychology* **49**: 710–721.
McCrae RR, Costa PT Jr. 1985b. Comparison of EPI and Psychoticism scales with measures of the Five-Factor model of personality. *Personality and Individual Differences* **6**: 587–597.
Moosbrugger H, Fischbach A. 1999. 'Evaluation of the dimensionality of the Eysenck Personality Profiler—German version: a contribution to the "Super Three" vs. "Big Five" discussion'. *Arbeiten aus dem Institut für Psychologie*, No. 7, Goethe University, Frankfurt am Main.
Ortet G, Ibáñez MI, Moro M, Silva F, Boyle GJ. 1999. Psychometric appraisal of Eysenck's revised Psychoticism scale: a cross-cultural study. *Personality and Individual Differences* **27**: 1209–1219.
Pelham BW. 1993. The idiographic nature of human personality: examples of the idiographic self-concept. *Journal of Personality and Social Psychology* **64**: 665–677.
Pervin LA. 1976. A free-response description approach to the analysis of person–situation interaction. *Journal of Personality and Social Psychology* **34**: 465–474.
Rawlings D, Freeman JL. 1997. Measuring paranoia/suspiciousness. In *Schizotypy: Implications for Illness and Health*, Claridge G (ed.). Oxford University Press: Oxford; 38–60.
Rosenzweig S. 1951. Idiodynamics in personality theory with special reference to projective methods. *Psychological Review* **58**: 213–223.
Runyan WM. 1983. Idiographic goals and methods in the study of lives. *Journal of Personality* **51**: 413–437.
Saucier G. 1992. Openness versus Intellect: much ado about nothing? *European Journal of Personality* **6**: 381–386.
Saucier G, Goldberg LR. 1996. The language of personality: lexical perspectives on the Five-Factor model. In *The Five-Factor Model of Personality: Theoretical Perspectives*, Wiggins JS (ed.). Guilford: New York; 21–50.
Saucier G, Goldberg LR. 1998. What is beyond the Big Five? *Journal of Personality* **66**: 495–524.
Schiller R, Tellegen A, Evens J. 1995. An idiographic and nomothetic study of personality description. In *Advances in Personality Assessment*, Vol. 10, Butcher JN, Spielberger CD (eds). Erlbaum: Hillsdale, NJ; 1–23.
Sectie voor Psychologisch Onderzoek van het Belgisch Leger, Brussel, en Laboratorium voor Persoonlijkheidsonderzoek, Leuven (SPOLAP). 1987a. *Handleiding Vrije Zelfbeschrijvingsmethode VZM*. [*Manual of the Free Self-Description Method VZM*]. Swets and Zeitlinger: Lisse, Netherlands.
Sectie voor Psychologisch Onderzoek van het Belgisch Leger, Brussel, en Laboratorium voor Persoonlijkheidsonderzoek, Leuven (SPOLAP). 1987b. *Quotatielijst voor Uitdrukkingen Vrije Zelfbeschrijvingsmethode VZM*. [*Quotation List for Expressions Free Self-Description Method VZM*]. Swets and Zeitlinger: Lisse, Netherlands.

Tellegen A, Waller NG. 1987. Re-examining basic dimensions of natural language trait descriptors. Paper presented at the 95th Annual Convention of the American Psychological Association, New York, August.

Tucker LR. 1951. A method for synthesis of factor analysis studies. Personnel Research Section Report No. 984, Department of the Army, Washington, DC.

Turner RG, Gilliland L. 1979. The comparative relevance and predictive validity of subject generated trait descriptions. *Journal of Personality* **47**: 230–244.

Van Kampen D. 1981. Theorie van klinische assessment [Theory of clinical asssessment]. In *Inleiding in de Klinische Psychologie* [*Introduction to Clinical Psychology*], Cassee AP, Höweler M, Janssen RHC (eds). Van Loghum Slaterus: Deventer, Netherlands; 69–111.

Van Kampen D. 1993. The 3DPT dimensions S, E, and N: a critical evaluation of Eysenck's Psychoticism model. *European Journal of Personality* **7**: 65–105.

Van Kampen D. 1996. The theory behind Psychoticism: a reply to Eysenck. *European Journal of Personality* **10**: 57–60.

Van Kampen D. 1997. Orderliness as a major dimension of personality: from 3DPT to 4DPT. *European Journal of Personality* **11**: 211–242.

